

Brent Braun
Braun Seating, Inc.
7346 West CR 400 North
Leiters Ford, IN 46945

Re: Registered Construction and Operation Status
049-11594-00031

Dear Mr. Braun:

The application from Braun Seating, Inc., received on November 23, 1999, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-5.1, it has been determined that the new emission source, a seat assembly plant to be located at 7346 West CR 400 North, Leiters Ford, IN 46945, is classified as registered. This emission source consists of the following facilities:

- (a) One metal fabrication shop with welding operations.
- (b) One upholstery assembly operation, applying contact adhesive to upholstery.
- (c) One upholstery assembly operation, applying polymeric adhesive to velcro.
- (d) Natural gas fired space heaters totaling 5.05 million British thermal units per hour.

The following conditions shall be applicable:

1. Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following:
 - (a) Opacity shall not exceed an average of forty percent (40%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
 - (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.
2. Pursuant to 326 IAC 6-3-2 (Particulate Emissions Limitations), combined particulate matter (PM) emissions from the metal welding and the upholstery contact adhesive application operations shall be limited by the following equation for process weight rates up to sixty thousand (60,000) pounds per hour:

$$E = 4.10 P^{0.67}$$

where E = rate of emission in pounds per hour and
P = process weight rate in tons per hour

For a process weight rate of 1.06 tons per hour, the equation states an emission limit of 4.26 pounds of particulate matter per hour.

This registration is the first air approval issued to this source. The source may operate according to 326 IAC 2-5.5.

An authorized individual shall provide an annual notice to the Office of Air Management that the source is in operation and in compliance with this registration pursuant to 326 IAC 2-5.1-2(f)(3) or 326 IAC 2-5.5-4(a)(3). The annual notice shall be submitted to:

Compliance Data Section
Office of Air Management
100 North Senate Avenue
P.O. Box 6015
Indianapolis, IN 46206-6015

no later than March 1 of each year, with the annual notice being submitted in the format attached.

Any change or modification which may increase the potential pollutant emissions to 25 tons per year or more from the emission source covered in this registration must be approved by the Office of Air Management (OAM) before such change may occur.

Sincerely,

Paul Dubenetzky, Chief
Permits Branch
Office of Air Management

ARD

cc: File - Fulton County
Fulton County Health Department
Air Compliance Section Inspector - Paul Karkiewicz
Compliance Data Section - Karen Nowak
Administrative and Development - Janet Mobley
Technical Support and Modeling - Michele Boner

Registration Annual Notification

This form should be used to comply with the notification requirements under 326 IAC 2-5.1-2(f)(3) or 326 IAC 2-5.5-4(a)(3).

Company Name:	Braun Seating, Inc.
Address:	7346 West CR 400 North
City:	Leiters Ford, IN 46945
Authorized individual:	
Phone #:	
Registration #:	049-11594-00031

I hereby certify that Braun Seating, Inc. is still in operation and is in compliance with the requirements of Registration 049-11594-00031.

Name (typed):
Title:
Signature:
Date:

Indiana Department of Environmental Management Office of Air Management

Technical Support Document (TSD) for a Registration

Source Background and Description

Source Name:	Braun Seating, Inc.
Source Location:	7346 West CR 400 North, Leiters Ford, IN 46945
County:	Fulton
SIC Code:	3798
Registration No.:	049-11594-00031
Permit Reviewer:	Allen R. Davidson

On November 23, 1999, the Office of Air Management (OAM) received an application from Braun Seating, Inc. relating to the construction and operation of the following equipment:

- (a) One metal fabrication shop with welding operations.
- (b) One upholstery assembly operation, applying contact adhesive to upholstery.
- (c) One upholstery assembly operation, applying polymeric adhesive to velcro.
- (d) Natural gas fired space heaters totaling 5.05 million British thermal units per hour.

History

This application is the first received by this emission source.

Enforcement Issues

This emission source was constructed and operated prior to receipt of a registration, an alleged violation of 326 IAC 2-5.1. OAM has referred the issue to the Office of Enforcement for possible action. There are no other enforcement actions pending against this emission source.

Stack Summary

There are no stacks associated with this emission source.

Recommendation

The staff recommends to the Commissioner that the revision be approved as a registration. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on November 23, 1999.

Emission Calculations

See Appendix A of this document for detailed emissions calculations. (5 pages)

Potential To Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA.”

The new source potential to emit is as follows:

Pollutant	Potential To Emit (tons/year)
PM	2.5
PM-10	2.5
SO ₂	0.0
VOC	12.0
CO	1.9
NO _x	2.2

HAP's	Potential To Emit (tons/year)
Hexane	3.0
Toluene	3.0
TOTAL	6.0

The potential to emit (as defined in 326 IAC 2-1.1-1(16)) a single hazardous air pollutant (HAP) is not equal to or greater than ten (10) tons per year, and the potential to emit a combination of HAP is not greater than or equal to twenty-five (25) tons per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7.

The potential to emit volatile organic compounds (VOC) is less than 25 tons per year, but greater than 10 tons per year. Therefore, the source requires a registration under 326 IAC 2-5.1.

This source is not a major source for Prevention of Significant Deterioration, 326 IAC 2-2. No attainment regulated pollutant has the potential to emit at a rate of 250 tons per year or more, and it is not in one of the 28 listed source categories.

Actual Emissions

No previous emission data has been received from the source.

County Attainment Status

The source is located in Fulton County.

Pollutant	Status
PM-10	attainment
SO ₂	attainment
NO ₂	attainment
Ozone	attainment
CO	attainment
Lead	attainment

Volatile organic compounds (VOC) and oxides of nitrogen (NO_x) are precursors for the formation of ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to the ozone standards. Fulton County has been designated as attainment or unclassifiable for ozone.

This source is not a major source for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 because the increase in potential to emit every attainment pollutant is less than the PSD significant levels. Therefore, pursuant to 326 IAC 2-2, and 40 CFR 52.21, the PSD requirements do not apply.

Federal Rule Applicability

There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this source.

There are no National Emission Standards for Hazardous Air Pollutants (NESHAP)(326 IAC 14 and 40 CFR Part 63) applicable to this source.

State Rule Applicability - Entire Source

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants)

This source is not subject to 326 IAC 2-4.1-1 (New Source Toxics Control). The source does not have potential to emit 10 tons per year of any HAP or 25 tons per year of any combination of HAPs.

326 IAC 2-6 (Emission Reporting)

This source is not subject to 326 IAC 2-6 (Emission Reporting), because it does not have the potential to emit more than one hundred (100) tons per year of any pollutant specified in the rule.

326 IAC 5-1 (Visible Emissions Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following:

- (a) Opacity shall not exceed an average of forty percent (40%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

State Rule Applicability - Metal Fabrication and Welding

326 IAC 6-3-2 (Particulate Emissions Limitations)

This facility is subject to 326 IAC 6-3-2. Pursuant to 326 IAC 6-3-2 (Particulate Emissions Limitations), particulate matter (PM) emissions shall be limited by the following equation for process weight rates up to sixty thousand (60,000) pounds per hour:

$$E = 4.10 P^{0.67}$$

where E = rate of emission in pounds per hour and
P = process weight rate in tons per hour

For a process weight rate of 1.06 tons per hour, the equation states an emission limit of 4.26 pounds of particulate matter per hour. This limit is shared with the contact adhesive application operation. A particulate control device is not required to comply with this limit. See Appendix A of this document for detailed emissions calculations. (5 pages)

State Rule Applicability - Adhesive Applications

326 IAC 8-1-6 (General VOC Reduction Requirements)

These facilities are not subject to 326 IAC 8-1-6 (General Reduction Requirements) because the potential to emit volatile organic compounds is less than twenty-five (25) tons per year. Therefore, the BACT (best available control technology) requirements do not apply.

326 IAC 6-3-2 (Particulate Emissions Limitations)

The contact adhesive application is subject to 326 IAC 6-3-2. Pursuant to 326 IAC 6-3-2 (Particulate Emissions Limitations), particulate matter (PM) emissions shall be limited by the following equation for process weight rates up to sixty thousand (60,000) pounds per hour:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

For a process weight rate of 1.06 tons per hour, the equation states an emission limit of 4.26 pounds of particulate matter per hour. This limit is shared with the welding operations. A particulate control device is not required to comply with this limit. See Appendix A of this document for detailed emissions calculations. (5 pages)

Air Toxic Emissions

Indiana presently requests applicants to provide information on emissions of the 188 hazardous air pollutants (HAPs) set out in the Clean Air Act Amendments of 1990. These pollutants are either carcinogenic or otherwise considered toxic and are commonly used by industries. They are listed as hazardous air pollutants on the Office of Air Management (OAM) Part 70 Application Form GSD-08.

This source will emit levels of hazardous air pollutants less than those which constitute a major source according to Section 112 of the 1990 Clean Air Act Amendments. See attached calculations for detailed hazardous air pollutant calculations. (5 pages)

Conclusion

The construction and operation of this source shall be subject to the conditions of the attached registration, No 049-11594-00031.

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100

Page 1 TSD App A

Company Name: Braun Seating, Inc.
Address City IN Zip: Leiters Ford, IN 46945
CP: 049-11594
Pit ID: 049-00031
Reviewer: Allen R. Davidson
Date: 12/15/99

Heat Input Capacity
MMBtu/hr

Potential Throughput
MMCF/yr

5.1

44.2

Pollutant						
Emission Factor in lb/MMCF	PM* 1.9	PM10* 7.6	SO2 0.6	NOx 100.0 **see below	VOC 5.5	CO 84.0
Potential Emission in tons/yr	0.0	0.2	0.0	2.2	0.1	1.9

*PM emission factor is filterable PM only. PM10 emission factor is condensable and filterable PM10 combined.

**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Note: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is used (i.e., condensable included/not included).

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100

Page 2 TSD App A

HAPs Emissions

Company Name: Braun Seating, Inc.
Address City IN Zip: Leiters Ford, IN 46945
CP: 049-11594
Plt ID: 049-00031
Reviewer: Allen R. Davidson
Date: 12/15/99

HAPs - Organics

Emission Factor in lb/MMcf	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential Emission in tons/yr	4.645E-05	2.654E-05	1.659E-03	3.981E-02	7.520E-05

HAPs - Metals

Emission Factor in lb/MMcf	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03
Potential Emission in tons/yr	1.106E-05	2.433E-05	3.097E-05	8.405E-06	4.645E-05

Methodology is the same as page 1.

The five highest organic and metal HAPs emission factors are provided above.
 Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Appendix A: Emissions Calculations
Welding and Thermal Cutting

Company Name: Braun Seating, Inc.
Address City IN Zip: Leiters Ford, IN 46945
CP: 049-11594
Plt ID: 049-00031
Reviewer: Allen R. Davidson
Date: 12/15/99

PROCESS	Number of Stations	Max. electrode consumption per station (lbs/hr)		EMISSION FACTORS* (lb pollutant/lb electrode)				EMISSIONS (lbs/hr)				HAPS (lbs/hr)
				PM = PM10	Mn	Ni	Cr	PM = PM10	Mn	Ni	Cr	
WELDING												
Submerged Arc	0	0		0.036	0.011			0.000	0.000	0.000	0	0.000
Metal Inert Gas (MIG)(carbon steel)	8	24.376		0.0055	0.0005			1.073	0.098	0.000	0	0.098
Stick (E7018 electrode)	0	1.65		0.0211	0.0009			0.000	0.000	0.000	0	0.000
Tungsten Inert Gas (TIG)(carbon steel)	0	0		0.0055	0.0005			0.000	0.000	0.000	0	0.000
Oxyacetylene(carbon steel)	0			0.0055	0.0005			0.000	0.000	0.000	0	0.000
FLAME CUTTING	Number of Stations	Max. Metal Thickness Cut (in.)	Max. Metal Cutting Rate (in./minute)	EMISSION FACTORS (lb pollutant/1,000 inches cut, 1" thick)**				EMISSIONS (lbs/hr)				HAPS (lbs/hr)
				PM = PM10	Mn	Ni	Cr	PM = PM10	Mn	Ni	Cr	
Oxyacetylene	0	0	0	0.1622	0.0005	0.0001	0.0003	0.000	0.000	0.000	0.000	0.000
Oxymethane	0			0.0815	0.0002		0.0002	0.000	0.000	0.000	0.000	0.000
Plasma**	0	0	0	0.0039				0.000	0.000	0.000	0.000	0.000
EMISSION TOTALS												
Potential Emissions lbs/hr								1.07				0.10
Potential Emissions lbs/day								25.74				2.34
Potential Emissions tons/year								4.70				0.43

METHODOLOGY

*Emission Factors are default values for carbon steel unless a specific electrode type is noted in the Process column.

**Emission Factor for plasma cutting from American Welding Society (AWS). Trials reported for wet cutting of 8 mm thick mild steel with 3.5 m/min cutting speed (at 0.2 g/min emitted). Therefore, the emission factor for plasma cutting is for 8 mm thick rather than 1 inch, and the maximum metal thickness is not used in calculating the emissions.

Using AWS average values: (0.25 g/min)/(3.6 m/min) x (0.0022 lb/g)/(39.37 in./m) x (1,000 in.) = 0.0039 lb/1,000 in. cut, 8 mm thick
 Plasma cutting emissions, lb/hr: (# of stations)(max. cutting rate, in./min.)(60 min./hr.)(emission factor, lb. pollutant/1,000 in. cut, 8 mm thick)
 Cutting emissions, lb/hr: (# of stations)(max. metal thickness, in.)(max. cutting rate, in./min.)(60 min./hr.)(emission factor, lb. pollutant/1,000 in. cut, 1" thick)
 Welding emissions, lb/hr: (# of stations)(max. lbs of electrode used/hr/station)(emission factor, lb. pollutant/lb. of electrode used)
 Emissions, lbs/day = emissions, lbs/hr x 24 hrs/day
 Emissions, tons/yr = emissions, lb/hr x 8,760 hrs/year x 1 ton/2,000 lbs.
 Welding and other flame cutting emission factors are from an internal training session document.
 Refer to AP-42, Chapter 12.19 for additional emission factors for welding.

**Appendix A: Emissions Calculations
VOC and Particulate
From Surface Coating Operations**

Company Name: Braun Seating, Inc.
Address City IN Zip: Leiters Ford, IN 46945
CP: 049-11594
Plt ID: 049-00031
Reviewer: Allen R. Davidson
Date: 12/15/99

Material	Density (Lb/Gal)	Weight % Volatile (H2O & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (unit/hour)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential (ton/yr)	lb VOC/gal solids	Transfer Efficiency
3M Green	6.6	81.00%	20.0%	61.0%	25.0%	19.00%	0.03100	22.000	5.36	4.02	2.74	65.79	12.01	1.87	21.15	50%
	0.0	0.00%	0.0%	0.0%	0.0%	0.00%	0.00000	0.000	0.00	0.00	0.00	0.00	0.00	0.00	ERR	0%
	0.0	0.00%	0.0%	0.0%	0.0%	0.00%	0.00000	0.000	0.00	0.00	0.00	0.00	0.00	0.00	ERR	0%

State Potential Emissions	Add worst case coating to all solvents	2.74	65.79	12.01	1.87
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METHODOLOGY

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr)
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24 hr/day)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (8760 hr/yr) * (1 ton/2000 lbs)
Particulate Potential Tons per Year = (units/hour) * (gal/unit) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) *(8760 hrs/yr) *(1 ton/2000 lbs)
Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids)
Total = Worst Coating + Sum of all solvents used

The velcro adhesive operation uses a polymeric coating that is the equivalent of "super glue."
Much of the VOC content will remain in the coating after the coating hardens.
The applicant has supplied calculations that show, based on five drops used per seat,
an emission rate of 0.000002 grams per second:

$$\frac{2.00\text{E-}06 \text{ gram/sec} * 3600 \text{ sec/hr} * 8760 \text{ hr/yr}}{454 \text{ gram/lb} * 2000 \text{ lb/ton}} = 6.946\text{E-}05 \text{ ton VOC/yr}$$

The following calculations determine compliance with 326 IAC 6-3-2:

$$E = 4.1 * (1.06 ^ {0.67}) = 4.26 \text{ lb/hr}$$

$$4.26 \text{ lb/hr} * 8760 \text{ hr/yr} / 2000 \text{ lb/ton} = 18.67 \text{ ton/yr} \quad (\text{will comply})$$

Appendix A: Emission Calculations
HAP Emission Calculations

Company Name: Braun Seating, Inc.
Address City IN Zip: Leiters Ford, IN 46945
CP #: 049-11594
Plt ID: 049-00031
Permit Reviewer: Allen R. Davidson
Date: 12/15/99

Material	Density (Lb/Gal)	Gallons of Material (gal/unit)	Maximum (unit/hour)	Weight % Xylene	Weight % Toluene	Weight % Formaldehyde	Weight % Benzene	Weight % Hexane	Weight % Glycol Ethers	Weight % Methanol	Xylene Emissions (ton/yr)	Toluene Emissions (ton/yr)	Formaldehyde Emissions (ton/yr)	Benzene Emissions (ton/yr)	Hexane Emissions (ton/yr)	Glycol Ethers Emissions (ton/yr)	Methanol Emissions (ton/yr)
3M Green	6.589	0.03100	22.000	0.00%	15.00%	0.00%	0.00%	15.00%	0.00%	0.00%	0.00	2.95	0.00	0.00	2.95	0.00	0.00
				0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
				0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Total State Potential Emissions	0.00	2.95	0.00	0.00	2.95	0.00	0.00
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METHODOLOGY

HAPS emission rate (tons/yr) = Density (lb/gal) * Gal of Material (gal/unit) * Maximum (unit/hr) * Weight % HAP * 8760 hrs/yr * 1 ton/2000 lbs